

WHAT IS CLAIMED IS:

1. A flush valve system that provides hands free control, comprising:
 - a sensor;
 - a bias circuit configured to generate a bias signal when an activation signal is received from the sensor;
 - an electrical switch coupled to the bias circuit, the electrical switch configured to turn on only while the bias circuit generates the bias signal;
 - a mechanical switch configured to turn on just before the electrical switch is turned off; and
 - a flush valve coupled to the electrical switch and the mechanical switch, the flush valve being configured to initiate fluid flow when the electrical switch is turned on and continue the flow until the mechanical switch is turned off.
2. The flush valve system of claim 1, wherein the electrical switch comprises a transistor.
3. The flush valve system of claim 2, wherein the mechanical switch comprises a single pole single throw switch.
4. The flush valve system of claim 1, further comprising a motor, the motor being mechanically coupled to the flush valve and electrically coupled to the electrical switch and the mechanical switch.
5. The flush valve system of claim 4, further comprising a gear train and a switch cam, the gear train being mechanically coupled to the motor and to the switch cam.
6. The flush valve system of claim 4, further comprising a gear train coupled to the motor, a rod cam coupled to the gear train, and a stem coupled to the rod cam.
7. The flush valve system of claim 6, wherein the rod cam is coupled to the flush valve.
8. The flush valve of claim 4, further comprising a break control logic that interrupts a ground connection to the motor after a predetermined amount of time.

9. An automatic flush valve system for evacuating waste, comprising:
- a motor;
 - a gear train mechanically coupled to the motor;
 - a switch cam mechanically coupled to the gear train;
 - a rod cam mechanically coupled to the gear train;
 - a valve mechanically coupled to the rod cam;
 - sensing logic electrically coupled to the motor to initiate a rotation of a motor shaft;
 - a mechanical switch mechanically coupled to the switch cam and electrically coupled to the motor to sustain the rotation of the motor shaft; and
 - braking logic electrically coupled to the sensing logic and the motor, the sensing logic configured to interrupt a power connection to the motor and the braking logic configured to terminate rotation of the motor shaft by converting the mechanical energy of the motor shaft into thermal energy.
10. The automatic flush valve system of claim 9, wherein the motor is a Direct Current motor.
11. The automatic flush valve system of claim 9, further comprising a shaft coupled to the switch cam and rod cam.
12. The automatic flush valve system of claim 9, wherein the switch cam comprises a cutout portion that actuates the mechanical switch.
13. The automatic flush valve system of claim 12, wherein the cutout portion includes a concave surface.
14. The automatic flush valve system of claim 9, further comprising break control logic that interrupts a ground connection to the motor after a predetermined amount of time.
15. The automatic flush valve system of claim 14, wherein the predetermined amount of time is about equal to a flushing cycle.

16. The automatic flush valve system of claim 14, wherein the braking logic comprises an integrated circuit.
17. The automatic flush valve system of claim 14, wherein the break control logic comprises a transistor pair coupled to the sensing logic.
18. An automatic braking method for use on an automatic flushing device, comprising:
receiving an actuation signal;
actuating an electronic switch to initiate a rotation of a switch cam and an opening of a valve;
actuating a mechanical switch when a cutout portion of the switch cam is in contact with a portion of the mechanical switch; and
closing the valve when the portion of the mechanical switch is outside of the cutout portion.
19. An automatic braking method of claim 18, further comprising a sensor coupled to the electronic switch.
20. The automatic braking method of claim 18, further comprising terminating the rotation of said switch cam by converting the mechanical energy into thermal energy through the use of a braking logic.
21. The automatic braking method of claim 19, wherein the sensor is positioned at about a fifteen degree angle with a plane that is substantially parallel to a housing that encloses the electronic switch.